

NIDCD Fact Sheet

Specific Language Impairment in Children

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES · NATIONAL INSTITUTES OF HEALTH · NATIONAL INSTITUTE ON DEAFNESS AND OTHER COMMUNICATION DISORDERS

What is specific language impairment?

Specific language impairment (SLI) is a language disorder that delays the mastery of language skills in children who have no hearing loss or other developmental delays. SLI is also called developmental language disorder, language delay, or developmental dysphasia. It is one of the most common childhood learning disabilities, affecting approximately 7 to 8 percent of children in kindergarten. The impact of SLI persists into adulthood.

What causes specific language impairment?

The cause of SLI is unknown, but recent discoveries suggest it has a strong genetic link. Children with SLI are more likely than those without SLI to have parents and siblings who also have had difficulties and delays in speaking. In fact, 50 to 70 percent of children with SLI have at least one other family member with the disorder.

What are the symptoms of specific language impairment?

Children with SLI are often late to talk and may not produce any words until they are 2 years old. At age 3, they may talk, but may not be understood. As they grow older, children with SLI will struggle to learn new words and make conversation. Having difficulty using verbs is a hallmark of SLI. Typical errors that a 5-year-old child with SLI would make include dropping the "s" from the end of present-tense



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verbs, dropping past tense, and asking questions without the usual "be" or "do" verbs. For example, instead of saying "She rides the horse," a child with SLI will say, "She ride the horse." Instead of saying "He ate the cookie," a child with SLI will say, "He eat the cookie." Instead of saying "Why does he like me?", a child with SLI will ask, "Why he like me?"



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How is specific language impairment diagnosed in children?

The first person to suspect a child might have SLI is often a parent or preschool or school teacher. A number of speech-language professionals might be involved in the diagnosis, including a speech-language pathologist (a health professional trained to evaluate and treat children with speech or language problems). Language skills are tested using assessment tools that evaluate how well the child constructs sentences and keeps words in their proper order, the number of words in his or her vocabulary, and the quality of his or her spoken language. There are a number of tests commercially available that can specifically diagnose SLI. Some of the tests use interactions between the child and puppets and other toys to focus on specific rules of grammar, especially the misuse of verb tenses. These tests can be used with children between 3 and 8 years of age and are especially useful for identifying children with SLI once they enter school.

What treatments are available for specific language impairment?

Because SLI affects reading it also affects learning. If it is not treated early, it can affect a child's performance in school. Since the early signs of SLI are often present in children as young as 3 years old, the preschool years can be used to prepare them for kindergarten with special programs designed to enrich language development. This kind of classroom program might enlist normally developing children to act as role models for children with SLI and feature activities that encourage role-playing and sharing time, as well as hands-on lessons to explore new, interesting vocabulary. Some parents also might want their child to see a speech-language pathologist, who can assess their child's needs, engage him or her in structured activities, and recommend home materials for at-home enrichment.

What kinds of research are being conducted?

The National Institute on Deafness and Other Communication Disorders (NIDCD) supports a wide variety of research to understand the genetic underpinnings of SLI, the nature of the language deficits that cause it, and better ways to diagnose and treat children with it.

- **Genetic research:** An NIDCD-supported investigator has recently identified a common variant in a gene on chromosome 6, called the KIAA0319 gene, that appears to play a key role in SLI. The genetic variant plays a supporting role in other learning disabilities, such as dyslexia, some cases of autism, and speech sound disorders (conditions in which speech sounds are either not produced or produced or used incorrectly). This finding lends support to the idea that difficulties in learning language may be coming from the same genes that influence difficulties with reading and understanding printed text. Other potentially influential genes also are being explored.
- **Bilingual research:** The standardized tests that speech-language pathologists use in schools to screen for language impairments are based on typical language development milestones in English. Because bilingual children are more likely to score in the at-risk range on these tests, it becomes difficult to distinguish between children who are struggling to learn a new language and children with true language impairments. After studying a large group of Hispanic children who speak English as a second language, NIDCD-funded researchers have developed a dual-language diagnostic test to identify bilingual children with language impairments. It's now being tested in a group of children 4 to 6 years old, and will eventually be expanded to children 7 to 9 years old. The same research team is also trying

out an intervention program with a small group of bilingual first graders with SLI to find techniques and strategies to help them succeed academically.

- **Diagnostic research:** Children with SLI have significant communication problems, which are also characteristic of most children with autism spectrum disorders (ASD). Impairments in understanding and the onset of spoken language are common in both groups. No one knows yet if there are early developmental signs that could signal or predict language difficulties and might potentially allow for early identification and intervention with these children. The NIDCD is currently funding researchers looking for risk markers associated with SLI and ASD that could signal later problems in speech and communication. In a group of children 6 months to 1 year old who, because of family history, are at risk for SLI or ASD, the investigators are collecting data using behavioral, eye-tracking, and neurophysiological measures, as well as general measures of cognitive and brain development. They will then follow these children until they are 3 years old to see if there are indicators that are specific to SLI or ASD or that could predict the development of either disorder. Findings from this research could have a major influence in developing new approaches to early screening and diagnosis for SLI and ASD.

Where can I get more information?

The NIDCD maintains a directory of organizations that provide information on the normal and disordered processes of hearing, balance, taste, smell, voice, speech, and language. Please see the list of organizations at www.nidcd.nih.gov/directory.

Use the following keywords to help you search for organizations that can answer questions and provide printed or electronic information on specific language impairment:

- Language
- Speech
- Speech-language pathologists

For more information, additional addresses and phone numbers, or a printed list of organizations, contact:

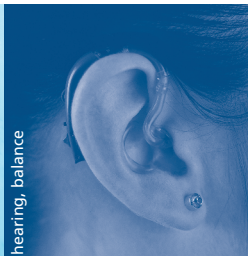
NIDCD Information Clearinghouse

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voice, speech, language



hearing, balance



smell, taste



NIDCD supports and conducts research and research training on the normal and disordered processes of hearing, balance, smell, taste, voice, speech, and language and provides health information, based upon scientific discovery, to the public.

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For more information, contact:

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